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Description

The present invention relates to a polyarylene sulfide resin composition. Particularly, it relates to a polyarylene sulfide resin composition which is improved in surface properties and fluidity and is inexpensive, and a molded article prepared by molding the same.

Recently, a thermoplastic resin which has high resistance to heat and chemicals and is flame-retardant has been demanded as materials for the components of electrical or electronic appliances, automobile devices or chemical instruments. A polyarylene sulfide resin represented by polyphenylene sulfide is one of the resins satisfying this demand and has a good cost performance, so that the demand therefor has increased. Generally, this resin is blended with a large amount of a filler with the purpose of reducing the cost and warpage thereof.

However, the composition thus obtained has disadvantages due to the influence of the filler used in that it gives a molded article poor in surface smoothness and that it exhibits lowered fluidity and much increased specific gravity. Though it has been expected to apply the composition to a field requiring excellent heat resistance and surface properties, for example, automobile lamp reflector, therefore, such application has not been realized as yet.

Generally, the following methods are employed in order to improve these disadvantages:

(1) the use of a low-molecular weight polymer excellent in fluidity,

and

(2) the reduction in the amount of the filler to be added.

However, these methods cannot sufficiently solve the disadvantages.

That is, the method (1) has disadvantages in that the resulting composition exhibits lowered mechanical strengths, that the method has no effect upon reduction in the specific gravity and that it cannot sufficiently improve the surface properties, while the method (2) has disadvantages in that it gives a molded article lowered in heat resistance (such as thermal deformation temperature) and resistance to warpage and deformation and that it brings about an unavoidable increase in the cost, though it is effective in lowering the specific gravity.

Summary of the Invention

With the purpose of improving the surface properties and fluidity of a polyarylene sulfide resin composition, particularly a polyphenylene sulfide resin composition, without increasing the cost, while keeping the inherent excellent heat resistance, the inventors of the present invention have prepared many compositions by adding a constant amount of each of various fillers to a polyarylene sulfide resin and have studied upon the effects thereof. As a result of the studies, the inventors of the present invention have found that a polyarylene sulfide resin composition containing a specific hollow microspherical filler is extremely good in fluidity and gives a molded article excellent particularly in surface properties and without its specific gravity being raised by an undesirable amount. on the basis of this finding, the present invention has been accomplished.

Namely, the present invention provides a polyarylene sulfide resin composition comprising

(A) 100 parts by weight of a polyarylene sulfide resin and

(B) 5 to 400 parts by weight of a processing-breakage resistant, hollow microspherical filler which comprises 20 to 80% by weight of SiO_2 and 20 to 80% by weight of Al_2O_3 as major components and has a specific gravity of 1.0 to 2.5 and an average particle diameter of 1 to 100 μm.

The invention also provides a molded article for light reflection, such as a lamp reflector, which is prepared by molding a composition as defined and claimed herein.

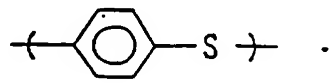
Further, it has been also found that a composition further containing 10 to 200 parts by weight, preferably 10 to 100 parts by weight, of a filler other than the component (B), particularly glass fiber, in addition to the above components (A) and (B) is improved not only in the above respects but also in mechanical properties, so that it is more useful for some practical purposes.

The resin (A) to be used as the base in the present invention is a polyarylene sulfide resin comprising at least 70 molar % of repeating units represented by the structural formula: -(- Ar - S -)- (wherein Ar is an aryl group). A representative example thereof is polyphenylene sulfide comprising at least 70 molar % of repeating units represented by the structural formula: -(- Ph - S -)- (wherein Ph is a phenylene group) (hereinafter the resin will be abbreviated to "PPS"). Particularly, it is suitable to use PPS having a melt viscosity of 10 to 20000 P, preferably 100 to 5000P as determined at 310 °C with a shear rate of 1200/sec.

Known polyarylene sulfide resins are classified into a group comprising substantially linear ones free from branched or crosslinked structure and another group comprising ones having a branched or crosslin-

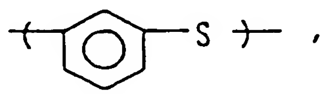
ked structure, the difference in the structure resulting mainly from the preparation process thereof. Although any resin of either group or any mixture of a resin of one group with that of the other group can be used in the present invention, it is more effective to use a linear one free from any branched structure.

Preferred examples of the PPS polymer to be used in the present invention include those comprising at least 70 molar %, still preferably at least 80 molar %, of p-phenylene sulfide units:

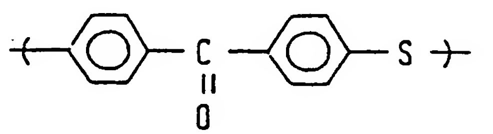


If the content of this unit is less than 70 molar %, the crystallinity of the resulting polymer will be too low to attain a sufficiently high strength and the toughness thereof will be also poor, though high crystallinity is a characteristic of a crystalline polymer.

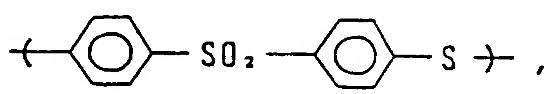
The linear PPS polymer to be used in the present invention may contain at most 30 molar % of other comonomer units and examples thereof include a m-phenylene sulfide unit:



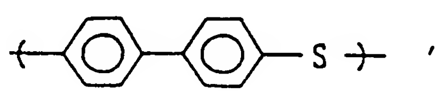
a diphenylene ketone sulfide unit:



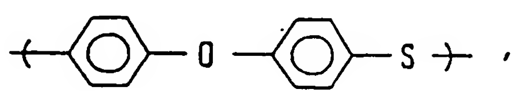
a diphenylene sulfone sulfide unit:



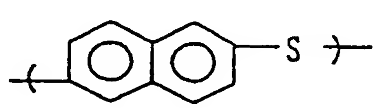
a diphenylene sulfide unit:



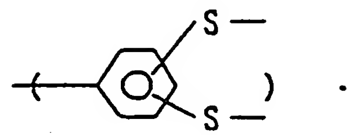
a diphenylene ether sulfide unit:



a 2,6-naphthalene sulfide unit:

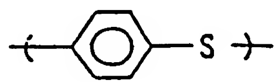


and a trifunctional unit:

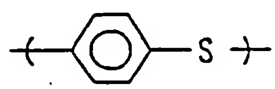


It is preferable from the standpoint of inhibiting the lowering in the crystallinity that the content of a trifunctional unit be 1 molar % or below.

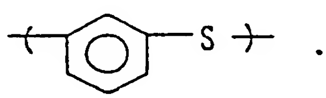
Particularly preferred examples of the PPS polymer to be used in the present invention include a linear PPS homopolymer composed of p-phenylene sulfide units:



and linear block copolymers comprising 70 to 95 molar % of p-phenylene sulfide repeating units:



and 5 to 30 molar % of m-phenylene sulfide repeating units:



The base resin of the present invention may additionally contains a small amount of other thermoplastic resin beside the above components as far as the object is not hindered. This thermoplastic resin may be any one, as far as it is stable at high temperature. Examples thereof include aromatic polyesters comprising aromatic dicarboxylic acids and diols or hydroxycarboxylic acids, such as polyethylene terephthalate and polybutylene terephthalate; polyamide, polycarbonate, ABS, polyphenylene oxide, polyalkyl acrylate, polyacetal, polysulfone, polyether sulfone, polyether imide, polyether ketone and fluororesins. These thermoplastic resins may be used also as a mixture of two or more of them.

The hollow microspherical filler to be used as the component (B) in the present invention is a hollow microspherical aluminum silicate comprising 20 to 80% by weight of SiO_2 and 20 to 80% by weight of Al_2O_3. The filler is generally prepared by treating a natural silicate at high temperature to expand it. Generally, a hollow microspherical filler has a high extent of expansion. Therefore, when it is added to a resin, the obtained resin composition has a problem in that the hollow filler contained therein is broken by extrusion or injection owing to the insufficient mechanical properties of the filler to give a molded article having a variable specific gravity, though it exhibits a reduced specific gravity. In order to solve this problem, the inventors of the present invention have attempted to improve the mechanical properties of the filler by reducing the extent of expansion thereof.

Namely, the hollow microspherical filler to be used in the present invention must have a specific gravity of 1.0 to 2.5, preferably 1.8 to 2.4 in order to inhibit the breakage thereof by processing.

Generally, a hollow microspherical filler has a particle diameter of 1 to 500 μm. According to the present invention, it is necessary from the standpoint of both the resistance of the filler to breakage and the surface properties and fluidity of the resin composition that the filler to be used therein has a particle diameter of 1 to 100 μm, preferably 2 to 60 μm.

As described above, the hollow microspherical filler (B) to be used in the present invention has a chemical composition of an aluminum silicate, i.e., comprises 20 to 80% by weight of SiO_2 and 20 to 80% by weight of Al_2O_3, preferably 40 to 60% by weight of SiO_2 and 25 to 40% by weight of Al_2O_3.

In this connection it is to be noted that the contamination of the filler with a small amount of an oxide or hydroxide of Fe, Ti, Ca, Mg, K or the like does not exert any adverse effect upon the object of the present invention.

The amount of the hollow microspherical filler (B) to be added is 5 to 400 parts by weight, preferably 10 to 200 parts by weight, per 100 parts by weight of the polyarylene sulfide resin to be used. If the amount is less than 5 parts by weight, the objective improvement in the physical properties such as heat resistance will not sufficiently be attained, while if it exceeds 400 parts by weight, the mechanical properties will be unfavorably lowered.

The composition of the present invention may further contain an inorganic or organic filler (C) other than the component (B) depending upon its object.

Although the filler (C) is not necessarily an essential component in the present invention, the addition thereof is preferable for producing a molded article which is excellent in mechanical properties, heat resistance, dimensional stability (resistance to deformation and warpage), electrical properties and other performances. The filler (C) may be selected from among fibrous, powdery, granular and flaky ones depending upon the object. Particularly, it is preferable to use a fibrous filler together with the component (B).

The fibrous filler includes inorganic fibrous materials, for example, glass fiber, carbon fiber, asbestos fiber, silica fiber, silica/alumina fiber, aluminum fiber, zirconia fiber, boron nitride fiber, silicon nitride fiber, boron fiber, potassium titanate fiber and fibers of metals such as stainless steel, aluminum, titanium, copper or brass. Further, the fibrous filler includes high-melting organic fibrous materials and particular examples thereof include polyamides, fluororesins and acrylic resins. Among them, glass fiber is most representative.

The simultaneous use of a fibrous filler, particularly glass fiber, with the hollow microspherical filler (B) brings about a remarkable improvement in the mechanical properties and thermal deformation temperature, substantially without exerting any adverse effect upon the objective physical properties.

Although the glass fiber to be used in the present invention as the component (C) may be any conventional one and the size thereof is not particularly limited, it is preferable to use a glass fiber having a diameter of 3 to 20 μm and a length of 0.03 to 15 mm.

Although the chemical composition of the glass fiber may be either A-glass or E-glass, it is particularly preferable to use E-glass, because it undergoes less leaching of the components thereof when it is kneaded with a resin.

Alternatively, the composition of the present invention may contain a powdery, granular or flaky filler, as far as the object of the present invention is not adversely affected thereby.

The powdery or granular filler includes carbon black, graphite, silica, quartz powder, glass bead, milled glass fiber, glass balloon, glass powder, silicates such as calcium silicate, aluminum silicate, kaolin, talc, clay, diatomaceous earth and wollastonite; metal oxides such as iron oxides, titanium oxide, zinc oxide, antimony trioxide and alumina; metal carbonates such as calcium carbonate and magnesium carbonate; metal sulfates such as calcium sulfate and barium sulfate; ferrite, silicon carbide, silicon nitride, boron nitride and various metal powders.

The flaky filler includes mica, glass flake and various metal foils.

These organic or inorganic fillers may be used alone or as a mixture of two or more of them as the component (C).

The amount of the filler (C) such as glass fiber to be added is preferably at most 200 parts by weight, still preferably 10 to 130 parts by weight, per 100 parts by weight of the polyarylene sulfide resin. The use of more than 200 parts by weight of the filler (C) is unfavorable, because the glass fiber comes up to the surface of the resulting molded article to result in poor surface properties.

Prior to the addition to a resin, a part or the whole of the components (B) and (C) to be used in the present invention may be treated with a surface treatment or a coupling agent. Examples of the treatment and coupling agent include functional compounds such as epoxy, isocyanate, silane and titanate compounds and other thermoplastic resins.

Further, the composition of the present invention may suitably contain an additive which is conventionally added to a thermoplastic or thermosetting resin, depending upon the performance required. Examples of such an additive include stabilizers such as antioxidant and ultraviolet absorber, antistatic agent, flame retardant, coloring agent such as dye and pigment, lubricant, crystallization accelerator and nucleating agent.

The polyarylene sulfide resin composition of the present invention can be prepared by a conventional process for the preparation of a synthetic resin composition and with conventional equipment therefor. Namely, necessary components are mixed and kneaded and extruded with a single- or twin-screw extruder to give a pellet. In the preparation, a part of the necessary components may be mixed, as a master batch,

with the residual part thereof, followed by molding. Alternatively, in order to facilitate the dispersion and mixing of necessary components, a part or the whole of the resinous components may be preliminarily ground, followed by mixing and extrusion.

The polyarylene sulfide resin composition of the present invention as described above has the following advantages:

(1) the composition of the present invention exhibits a low melt viscosity and an excellent fluidity, even when its filler content is high,

(2) since the filler contained in the molded article is hollow, the specific gravity of the article is kept low because of the maximum permitted density of the hollow microsphere filler; this low specific gravity is reliably attained, because the filler is resistant to breakage during moulding unlike other hollow fillers,

(3) the surface properties of the structural body according to the present invention are so excellent that a good mirror surface can be prepared by aluminizing the body, and when, for example, the structural body is used for a lamp reflector, the heat resistance, mirror surface properties, stiffness and resistance to humidity and solvent of the resulting lamp reflector are well-balanced, and

(4) the hollow microspherical filler according to the present invention can be prepared from natural substances, so that the cost thereof may be lower than those of other hollow fillers to bring about reduction in the costs of the composition and the molded article.

(Examples)

Examples 1 to 12 and Comparative Examples 1 to 6

A hollow microspherical filler (B) and a glass fiber (C) were added to a polyphenylene sulfide resin (a product of Kureha Chemical Industry Co., Ltd.; trade-mark "Fortlon KPS") each in an amount given in Table 1, followed by mixing for 2 minutes. The obtained mixture was extruded at a cylinder temperature of 310 °C to give a polyphenylene sulfide resin composition pellet.

This pellet was molded by using an injection molding machine at a cylinder temperature of 320 °C and a mold temperature of 150 °C into an ASTM test piece. This test piece was examined for physical properties.

The melt viscosity of the test piece was determined by the use of a capillary (10 mm x 1 mmØ) and a capillograph mfd. by Toyo Seiko under the conditions of 310 °C and a shear rate of 1200/sec. In order to determine the surface smoothness of a molded product, the above pellet was molded by the use of an injection molding machine at a cylinder temperature of 320 °C and a mold temperature of 150 °C into a flat plate (120 mm x 120 mm x 3 mm). This plate was examined for imaging properties by the use of a measuring device for imaging (mfd. by Suga Test Instruments Co., Ltd.) under the conditions of an optical comb of 1.0 mm and an angle of reflection of 45 °C.

Further, the rupture cross-section of a molded article was observed with an electron microscope to determine the extent of the breakage of the hollow microspherical filler by the extrusion and the injection. The results are shown in Table 1.

For comparison, the results of the cases wherein other powdery or granular substances were used instead of the component (B) are also shown in Table 1 as Comparative Examples.

Table 1

	Composition			
	(A) PPS resin (parts by weight)	(B) Inorganic filler (kind)	(B) Inorganic filler (parts by weight)	(C) glass fiber (13 μm x 3 mm) (parts by weight)
Ex. 1	100	Zeeosphere[a]	5	0
Ex. 2	100	Zeeosphere[a]	25	0
Ex. 3	100	Zeeosphere[a]	70	0
Ex. 4	100	Zeeosphere[a]	100	0
Ex. 5	100	Zeeosphere[a]	150	0
Ex. 6	100	Zeeosphere[a]	400	0
Ex. 7	100	Zeeosphere[a]	100	10
Ex. 8	100	Zeeosphere[a]	125	25
Ex. 9	100	Zeeosphere[a]	100	100
Ex. 10	100	Zeeosphere[b]	100	100
Ex. 11	100	Zeeosphere[c]	100	100
Ex. 12	100	Zeeosphere[a]	30	200
Comp. Ex. 1	100	glass bead	150	0
Comp. Ex. 2	100	glass bead	100	100
Comp. Ex. 3	100	calcium carbonate	100	100
Comp. Ex. 4	100	glass balloon[d]	100	100
Comp. Ex. 5	100	"shirasu" balloon[e]	100	100
Comp. Ex. 6	100		0	70

a) Aluminum silicate balloon mfd. by Zeelan, SiO_2: 52% by weight, Al_2O_3: 33% by weight, specific gravity: 2.1, average particle diameter: 10 μm.
b) Aluminum silicate balloon mfd. by Zeelan, SiO_2: 54% by weight, Al_2O_3: 30% by weight, specific gravity: 1.9, average particle diameter: 56 μm.
c) Aluminum silicate balloon mfd. by Zeelan, SiO_2: 49% by weight, Al_2O_3: 35% by weight, specific gravity: 2.2, average particle diameter: 5 μm.
d) Glass balloon mfd. by Asahi Glass Co., Ltd., specific gravity: 0.58
e) Shirasu (a white arenaceous sediment) balloon: SiO_2: 75% by weight, Al_2O_3: 14% by weight, specific gravity: 0.30, average particle diameter: 200 μm.

Table 1 (cont'd)

	Characteristics of molded article							
	Tensile strength (kgf/cm^2)	Tensile elongation (%)	Flexural strength (kgf/cm^2)	Flexural modulus (kgf/cm^2)	Specific gravity	Melt viscosity (poise)	Imaging properties	State of the filler present in the molded article
Ex. 1	1000	3.6	1200	39000	1.30	1400	91.2	no breakage of hollow filler
Ex. 2	930	3.1	1150	72000	1.46	1720	88.7	no breakage of hollow filler
Ex. 3	920	2.2	1020	80000	1.59	1840	83.8	no breakage of hollow filler
Ex. 4	790	1.2	970	87000	1.65	1860	80.6	no breakage of hollow filler
Ex. 5	700	0.7	950	110000	1.73	2000	73.1	no breakage of hollow filler
Ex. 6	460	0.4	860	142000	1.09	4200	39.2	no breakage of hollow filler
Ex. 7	850	1.1	1010	150000	1.68	1930	73.6	no breakage of hollow filler
Ex. 8	940	0.8	1200	166000	1.75	2490	50.2	no breakage of hollow filler
Ex. 9	1040	0.8	1610	200000	1.87	2050	27.6	no breakage of hollow filler
Ex. 10	970	0.7	1540	189000	1.85	3000	25.5	no breakage of hollow filler
Ex. 11	1120	0.8	1620	197000	1.89	2890	31.2	no breakage of hollow filler
Ex. 12	1310	0.6	2200	220000	1.98	3350	27.5	no breakage of hollow filler
Comp. Ex. 1	700	0.6	930	114000	1.87	3160	38.5	
Comp. Ex. 2	1270	0.9	2080	192000	1.95	3850	11.5	
Comp. Ex. 3	1410	0.9	2100	185000	2.00	4510	10.2	
Comp. Ex. 4	1490	1.1	2020	161000	1.71	2780	12.8	breakage of hollow filler
Comp. Ex. 5	1400	1.0	1800	158000	1.90	2620	10.4	breakage of hollow filler
Comp. Ex. 6	1750	1.6	2500	130000	1.68	3070	9.0	

Claims

1. A polyarylene sulfide resin composition comprising:
(A) 100 parts by weight of a polyarylene sulfide resin and

(B) 5 to 400 parts by weight of a processing-breakage resistant, hollow microspherical filler which comprises 20 to 80% by weight of SiO_2 and 20 to 80% by weight of Al_2O_3 as major components and has a specific gravity of 1.0 to 2.5 and an average particle diameter of 1 to 100 µm.

2. A polyarylene sulfide resin composition as set forth in claim 1, in which the polyarylene sulfide (A) is a polyphenylene sulfide comprising at least 70 molar % of repeating units represented by the structural formula -(- Ph - S -)- (wherein Ph is a phenylene group) and having a melt viscosity of 10 to 20 000P, as determined at 310°C with a shear rate of 1200/sec.

3. A polyarylene sulfide resin composition as set forth in claim 1 or claim 2, in which the filler (B) has a specific gravity of 1.8 to 2.4.

4. A polyarylene sulfide resin composition as set forth in any preceding claim, in which the filler (B) has a particle diameter of 2 to 60 µm.

5. A polyarylene sulfide resin composition as set forth in any preceding claim, in which the filler (B) comprises 40 to 60% by weight of SiO2 and 25 to 40% by weight of Al_2O_3.

6. A polyarylene sulfide resin composition as set forth in any preceding claim, which includes the filler (B) in an amount of 10 to 200 parts by weight per 100 parts by weight of the polyarylene sulfide (A).

7. A polyarylene sulfide resin composition as set forth in any preceding claim, which further contains (C) 10 to 100 parts by weight of a filler other than the component (B) in addition to the components (A) and (B).

8. A polyarylene sulfide resin composition as set forth in claim 7, in which the additional filler (C) is glass fiber.

9. A polyarylene sulfide resin composition as set forth in claim 8, in which the glass fiber (C) has a diameter of 3 to 20 µm and a length of 0.03 to 15 mm.

10. A molded article for light reflectance which is prepared by molding a polyarylene sulfide resin composition as set forth in any preceding claim.

Patentansprüche

1. Polyarylensulfidharz-Zusammensetzung, umfassend:
(A) 100 Gewichtsteile eines Polyarylensulfidharzes und
(B) 5 bis 400 Gewichtsteile eines gegenüber dem Zerbrechen bei der Verarbeitung widerstandsfähigen, hohlen Füllstoffs aus Mikrokügelchen, der 20 bis 80 Gew.-% SiO_2 und 20 bis 80 Gew.-% Al_2O_3 als Hauptkomponenten umfaßt und eine spezifische Dichte von 1,0 bis 2,5 und einen durchschnittlichen Teilchendurchmesser von 1 bis 100 µm hat.

2. Polyarylensulfidharz-Zusammensetzung gemäß Anspruch 1, in welcher das Polyarylensulfid (A) ein Polyphenylensulfid ist, das wenigstens 70 Mol-% repetierende Struktureinheiten, dargestellt durch die Strukturformel -(-Ph-S-)-, (worin Ph eine Phenylengruppe ist), umfaßt und eine Schmelzviskosität von 10 bis 20 000 Poise hat, wie sie bei 310°C bei einer Schergeschwindigkeit von 1200/s bestimmt wurde.

3. Polyarylensulfidharz-Zusammensetzung gemäß Anspruch 1 oder Anspruch 2, in welcher der Füllstoff (B) eine spezifische Dichte von 1,8 bis 2,4 hat.

4. Polyarylensulfidharz-Zusammensetzung gemäß irgendeinem der vorhergehenden Ansprüche, in welcher der Füllstoff (B) einen Teilchendurchmesser von 2 bis 60 µm hat.

5. Polyarylensulfidharz-Zusammensetzung gemäß irgendeinem der vorhergehenden Ansprüche, in welcher der Füllstoff (B) 40 bis 60 Gew.-% SiO_2 und 25 bis 40 Gew.-% Al_2O_3 umfaßt.

6. Polyarylensulfidharz-Zusammensetzung gemäß irgendeinem der vorhergehenden Ansprüche, welche den Füllstoff (B) in einer Menge von 10 bis 200 Gewichtsteilen pro 100 Gewichtsteile des Polyarylensulfids (A) umfaßt.

7. Polyarylensulfidharz-Zusammensetzung gemäß irgendeinem der vorhergehenden Ansprüche, welche weiterhin (C) 10 bis 100 Gewichtsteile eines anderen Füllstoffs als der Komponente (B) zusätzlich zu den Komponenten (A) und (B) enthält.

8. Polyarylensulfidharz-Zusammensetzung gemäß Anspruch 7, in welcher der zusätzliche Füllstoff (C) Glasfaser ist.

9. Polyarylensulfidharz-Zusammensetzung gemäß Anspruch 8, in welcher die Glasfaser (C) einen Durchmesser von 3 bis 20 µm und eine Länge von 0,03 bis 15 mm hat.

10. Geformter Gegenstand für Licht-Remission, der durch Formen einer Polyarylensulfid-Zusammensetzung gemäß irgendeinem der vorhergehenden Ansprüche hergestellt wird.

Revendications

1. Composition de résine de polysulfure d'arylène comprenant :
   (A) 100 parties en poids d'une résine de polysulfure d'arylène, et
   (B) 5 à 400 parties en poids d'une charge de microsphères creuses résistant à la rupture lors de la fabrication, qui comprend 20 à 80 % en poids de SiO_2 et 20 à 80 % en poids de Al_2O_3 en tant que constituants majeurs et a une densité de 1,0 à 2,5 et un diamètre moyen des particules de 1 à 100 µm.

2. Composition de résine de polysulfure d'arylène selon la revendication 1, dans laquelle le polysulfure d'arylène (A) est un polysulfure de phénylène comprenant au moins 70 % en moles d'unités répétées représentées par la formule structurale -(-Ph-S-)- (où Ph est un groupe phénylène) et ayant une viscosité au fondu de 10 à 20 000 P, telle que déterminée à 310 °C avec une vitesse de cisaillement de 1200/sec.

3. Composition de résine de polysulfure d'arylène selon la revendication 1 ou la revendication 2, dans laquelle la charge (B) a une densité de 1,8 à 2,4.

4. Composition de résine de polysulfure d'arylène selon l'une quelconque des revendications précédentes, dans laquelle la charge (B) a un diamètre de particules de 2 à 60 µm.

5. Composition de résine de polysulfure d'arylène selon l'une quelconque des revendications précédentes, dans laquelle la charge (B) comprend 40 à 60 % en poids de SiO_2 et 25 à 40 % en poids de Al_2O_3.

6. Composition de résine de polysulfure d'arylène selon l'une quelconque des revendications précédentes, qui inclut la charge (B) en une quantité de 10 à 200 parties en poids pour 100 parties en poids du polysulfure d'arylène (A).

7. Composition de résine de polysulfure d'arylène selon l'une quelconque des revendications précédentes, qui contient en outre (C) 10 à 100 parties en poids d'une charge autre que le constituant (B) en plus des constituants (A) et (B).

8. Composition de résine de polysulfure d'arylène selon la revendication 7, dans laquelle la charge (C) supplémentaire est de la fibre de verre.

9. Composition de résine de polysulfure d'arylène selon la revendication 8, dans laquelle la fibre de verre (C) a un diamètre de 3 à 20 µm et une longueur de 0,03 à 15 mm.

10. Article moulé réfléchissant la lumière, qui est préparé en moulant une composition de résine de polysulfure d'arylène telle que décrite dans l'une quelconque des revendications précédentes.